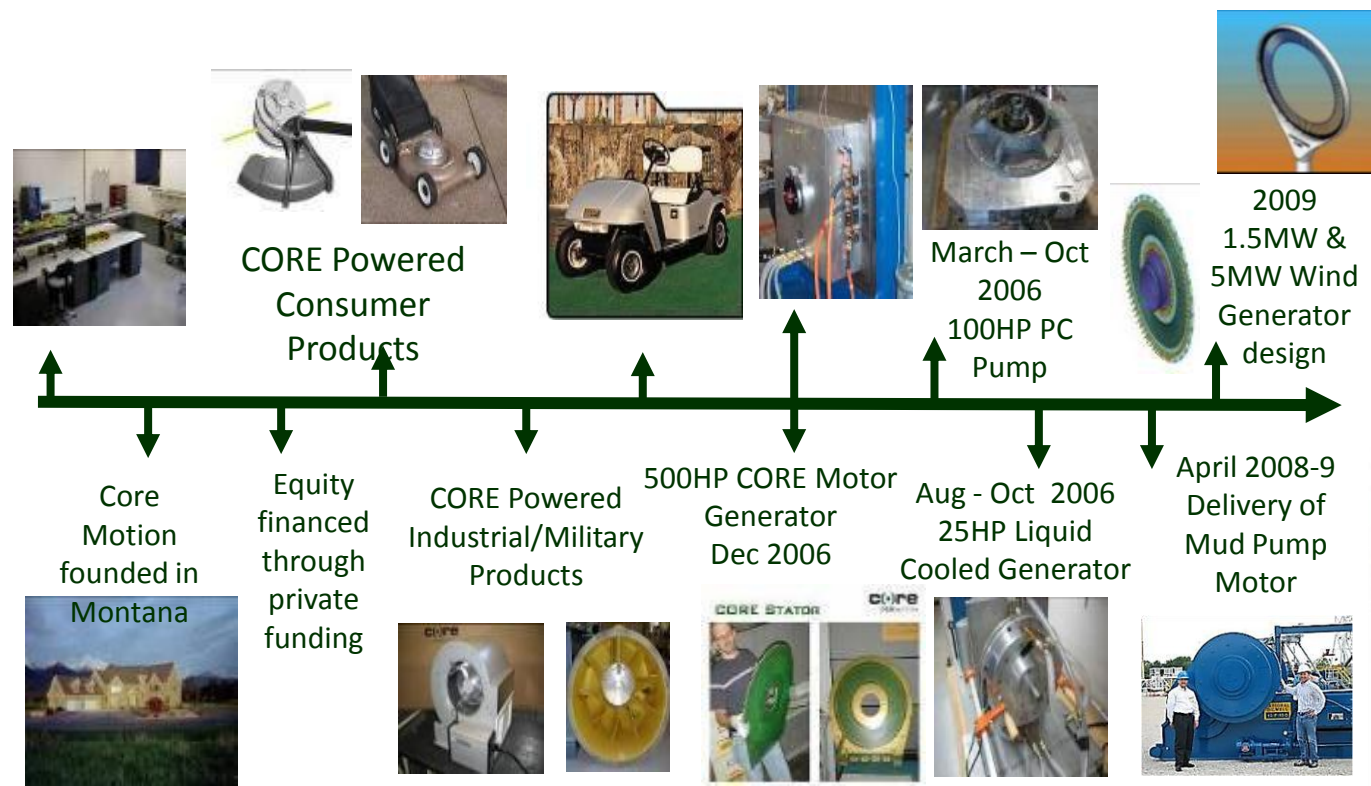


CORE Technology

Invented, Developed, Built and Tested in Ronan, MT;
Tested in Houston, TX; Fitchburg, MA; Chicago, IL,
Boulder, CO



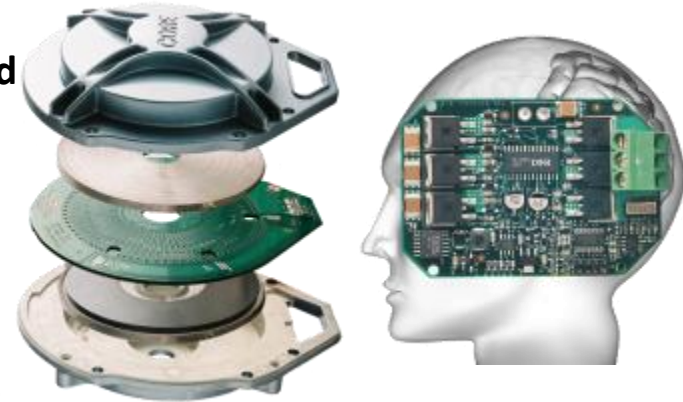
CORE Gearless Ironless PM Motor & Generator Technology

Technology

CORE Technology at a Glance

CORE Motors and Generators use printed circuit board stators and permanent magnets in place of conventional wire windings and iron laminations, which allows for the following advantages:

- **More robust**- windings are fully supported over entire surface by circuit board structure, process eliminates voids and insulation system irregularities (not susceptible to typical degradation mechanisms), no current flow on rotor
- **Automation**- lower parts count and more effective use of materials yields lower manufacturing cost
- **Low vibration**- insensitive to poor power quality, no iron in stator eliminates cogging and slot passing thermal and noise generating concerns
- Simple structure and compact size make integrating motor and driven equipment much easier
- Broad efficiency range
- Compact - 1/2 to 1/5 the weight of conventional motors



Wind Energy - Market Needs

Boulder Wind Power (BWP)

- Lower Cost of Energy
 - Reduce need for support and subsidies
 - Accelerate market growth
 - Levers (Capital cost, Reliability, Maintenance cost, Energy production)
- Product Differentiation
 - Have not focused on new technology development
- New Design Paradigm for Challenging Environments
 - Growth available in low wind and offshore
 - Current architectures don't scale economically

Our Answer – The BWP CORE Drivetrain

A radically different utility scale wind turbine drivetrain...
...Direct drive, axial gap, air core, PCB stator, segmented and flexible design

The BWP CORE Generator Traditional Generator



Our Differentiating Advantages

Air Core



- More Torque for the \$
- More Energy Production
- Highly Scalable Platform

Segmented, PCB Stator



- Simple, Low Cost Manufacturing, Maintenance and Assembly
- Overcomes transportation limitations

Direct Drive



- Higher Reliability
- Higher Efficiency

Our Team

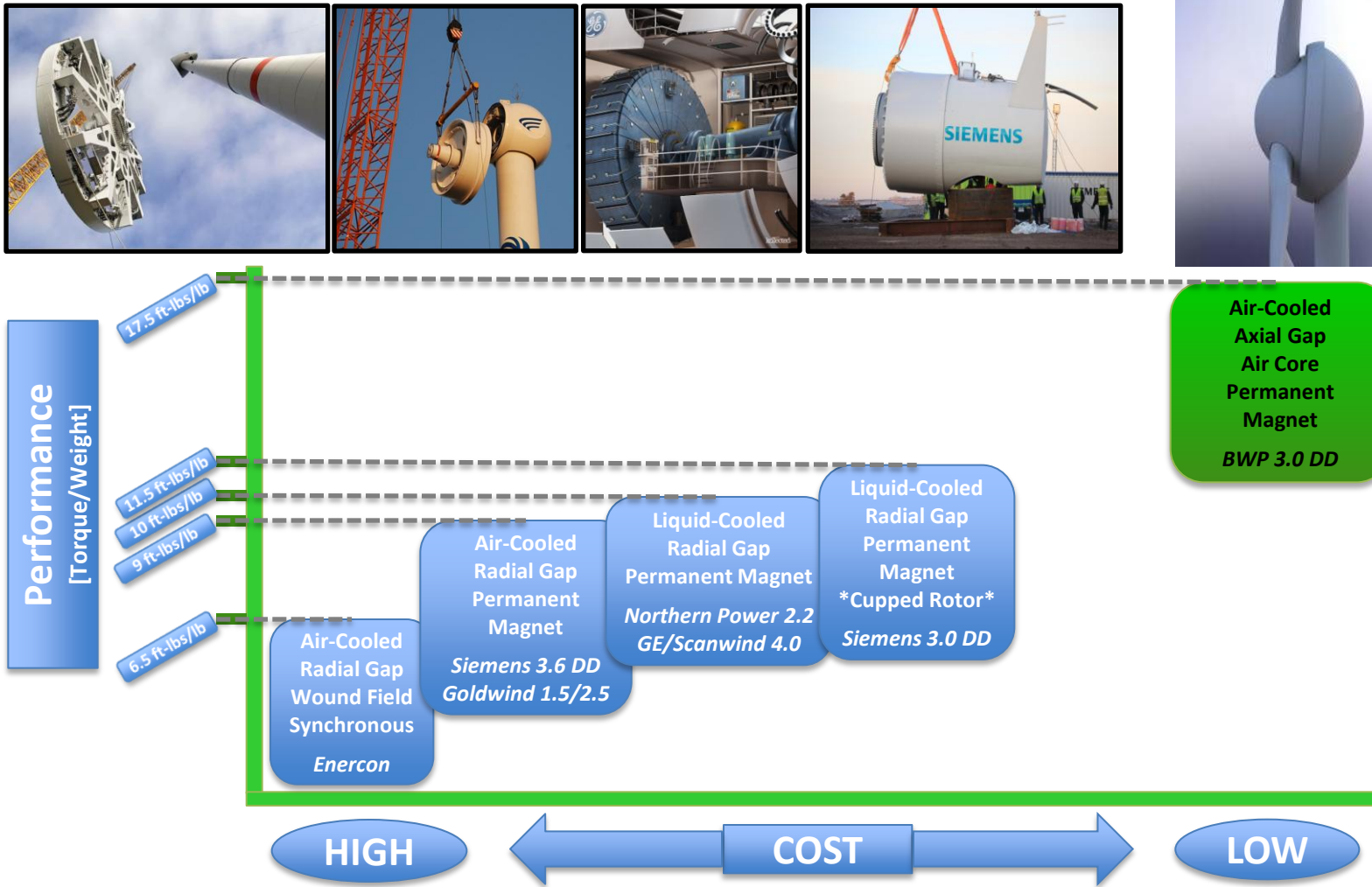


***Broad Industry Experience and
Systems Engineering Capabilities***

Specific Torque VS Specific Rating



Direct Drive WTG Comparison



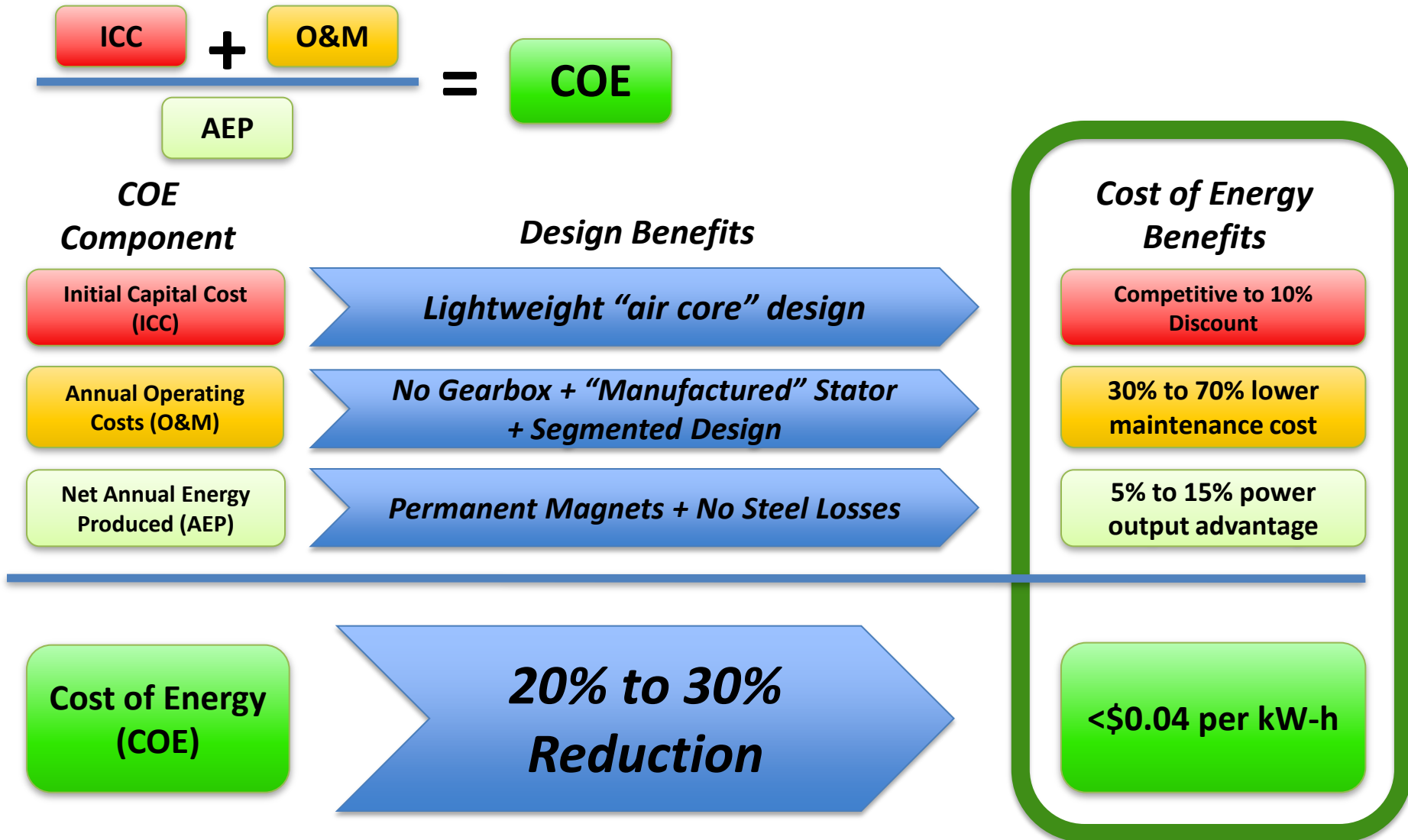
Generator rating is misleading in wind turbine applications...
Torque per weight is the true measure of generator performance

Nacelle Cost Comparisons

Component	Best-In-Class Geared 3.0 MW		Best-In-Class Direct Drive 3.0 MW		Boulder Wind Power Direct Drive 3.0 MW	
Generator	\$400,000		\$1,200,000		\$800,000	
Magnet	550 kg	\$27,500	4,000 kg	\$200,000	8,500 kg	\$250,000
Laminated Steel	2929 kg	\$50,000	14,000 kg	\$230,000	-	-
Copper	735 kg	\$7,500	5,000 kg	\$50,000	3,200 kg	\$250,000
Steel	2,500 kg	\$8,000	24,000 kg	\$80,000	31,000 kg	\$100,000
Insulation & Thermal Mgmt System	-	\$10,000	-	\$40,000	-	-
Labor	-	\$240,000	-	\$400,000	-	\$100,000
Supplier Margin (17%)		\$60,000	-	\$200,000		-
Gearbox	\$500,000		-		-	
Main Shaft	\$75,000		-		\$50,000	
Main Bearing	\$75,000		\$100,000		\$100,000	
Main Frame	\$100,000		\$150,000		\$150,000	
Nacelle Cover	\$50,000		\$50,000		\$100,000	
TOTAL NACELLE	\$1,200,000		\$1,500,000		\$1,100,000	

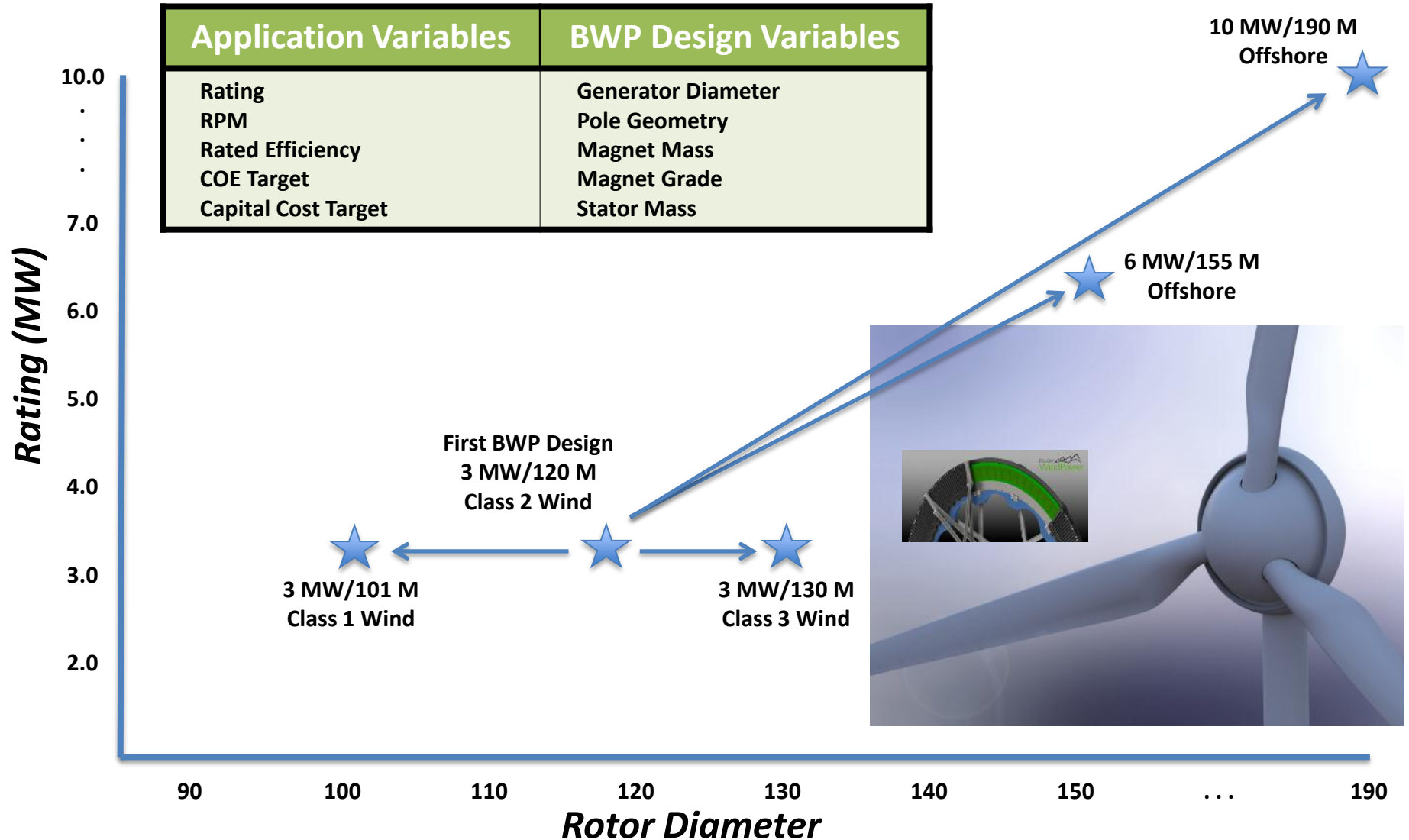
The BWP CORE Value Proposition

ENABLES LOWEST COE WIND TURBINE



A Flexible, Scalable Platform

BWP's TORQUE DENSITY ENABLES LARGER, HIGHER TORQUE MACHINES



Timeline

